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EXAMINER	
DOROSHENK, ALEXA A	
ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 05/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Applicati n N .	Applicant(s)
	09/384,082	OTOMO ET AL.
	Examiner	Art Unit
	Alexa A. Doroshenk ADO	1764

-- *The MAILING DATE of this communication appears on the cover sheet with the c rrespondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 26 February 2003.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-10,12-15,33,34,36-42 and 44-50 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10,12-15,33,34,36-42 and 44-50 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 26, 2003 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-6, 10, 12, 13, 15 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jahnke et al. (USP 5,345,756) in view of Rice (USP 4,571,935).

Regarding claim(s) 1, Jahnke et al. disclose(s) a similar integrated coal gasification combined cycle power generator, the generator comprising:

a coal gasification system for producing a combustible gas from coal, wherein said gasification system supplies said combustible gas to a gas turbine system (C9/L51-C10/L51);

said gas turbine system comprises a gas turbine for performing expansion work using said combustible gas, wherein said gas turbine supplies exhaust gas to a heat recovery system (C10/L40-51 & C11/L58-63);

said heat recovery system performs heat exchange, wherein said heat recovery system uses said exhaust gas supplied from said gas turbine as a heat source, and supplies steam generated in the heat exchange to a steam turbine system (C11/L58-C12/L10);

said steam turbine system performs expansion work (C10/L40-51), said steam turbine system comprising a condenser to condense said steam from said heat recovery system into water, said water being supplied to a heat exchanger in said coal gasification system, where said water is heated to steam (C12/L22-28).

While Jahnke et al. does disclose that said steam created in a heat exchanger in said coal gasification system is further heated by removing waste heat in another stage of the generator (C9/L11-20 and C12/L28-40), the reference does not explicitly disclose said another stage being at least one high-temperature section of the gas turbine system which is at a temperature higher than a temperature of said steam from said heat exchanger.

Rice teaches a combined cycle power generator wherein steam generated by steam turbine system is used to cool at least one high-temperature section of the gas turbine system which is at a temperature higher than a temperature of said steam (Abstract) and after cooling said gas turbine, collected and provided to a steam turbine (col. 11, lines 27-31) for the purpose of increasing system efficiency by providing effective cooling to said gas turbine and at the same time allowing for steam re-heating and recycle to the steam turbine system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use steam condensed by a condenser in steam turbine system and heated to steam in a heat exchanger in coal gasification system, in power generator of Jahnke et al., to cool at least one high-temperature section of the gas turbine system which is at a temperature higher than the temperature of said steam, as taught by Rice, for the purpose of increasing system efficiency by providing effective cooling to said gas turbine and at the same time allowing for steam re-heating and recycle to the steam turbine system.

Regarding claim(s) 2-3, Jahnke et al. in view of Rice disclose(s) all of the claim limitations as set forth above. Additionally Rice teaches the power generator wherein: a higher-temperature steam is produced after cooling said high-temperature section of the gas turbine system with said steam from said heat exchanger, said higher-temperature steam is recovered from said at least one high-temperature section of the gas turbine system and supplied to a steam turbine in said steam turbine system (Abstract); and

said at least one high-temperature section of the gas turbine is at least one of said gas turbine and a gas turbine combustor (Abstract).

Regarding claim(s) 4, Jahnke et al. in view of Rice disclose(s) all of the claim limitations as set forth above. Additionally Jahnke et al. discloses the power generator further comprising:

a gasification substance producing unit (156) in said coal gasification system for producing an oxygen gas (160) and a nitrogen gas (154) from air (155), said gasification

substance producing unit (156) supplying said oxygen gas (160) to a coal gasification unit (1) in said coal gasification system;

wherein said coal gasification unit (1) receives said oxygen gas (160) from said gasification substance producing unit (156) and receives coal (7);

said coal gasification unit (1) burns the coal (7) with the oxygen gas (160) from said gasification substance supplying unit (156), producing said combustible gas and introducing said combustible gas into a cooling unit in said coal gasification system (C9/L51-C10/L51);

said cooling unit cools said combustible gas from said coal gasification unit (1), said cooling unit being in fluid connection with a gas cleanup unit in said coal gasification system (C9/L51-C10/L51); and

said gas cleanup unit removes impurities from said combustible gas (C9/L51-C10/L51).

While Jahnke et al. does not explicitly disclose said coal gasification unit receiving coal from a coal supplying unit, a usage of a coal supplying unit is inherent in the disclosed power generator.

While Jahnke et al. does not explicitly state that the recycled steam stream to the gas turbine is sent through the gas cleanup unit, Jahnke does teach the desire to purify fluids which are to be fed to the gas turbine (col. 9, lines 51-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to expand this teaching to sending the steam to be used in the gas turbine to also be sent to the cleanup unit.

Regarding claim(s) 5, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Jahnke et al. discloses the power generator wherein:

wherein said coal supplying unit employs nitrogen gas (C4/L5-18).

While Jahnke et al. does not explicitly disclose said nitrogen gas employed in said coal supplying unit originating from said gasification substance producing unit, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least part of nitrogen gas form said gasification substance producing unit in said coal supplying unit for the purpose of improving system economic by utilizing as a temperature moderator a gas stream which is available as a by-product of disclosed generator.

Regarding claim(s) 6, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Jahnke et al. discloses the power generator wherein:

the nitrogen gas produced in said gasification substance producing unit is supplied to said gas turbine combustor, said nitrogen gas combined therein with said combustible gas (C11/L33-41).

Regarding claim(s) 10, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Rice teaches the power generator wherein:

a higher-temperature steam is produced after cooling said at least one high-temperature section of the gas turbine system with said steam from said heat exchanger (Abstract); and

said at least one high-temperature section of the gas turbine is at least one of said gas turbine and a gas turbine combustor (Abstract).

While Rice does not explicitly disclose higher-temperature steam being supplied to a heat recovery system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least part of said higher-temperature steam in said heat recovery system for the purpose of improving system economic by utilizing a higher-temperature steam which is available as a by-product of disclosed generator for production of steam which can be used in high pressure steam turbine. Regarding claim(s) 12, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Jahnke et al. discloses the power generator further comprising:

a gasification substance producing unit (156) in said coal gasification system for producing an oxygen gas (160) and a nitrogen gas (154) from air (155), said gasification substance producing unit (156) supplying said oxygen gas (160) to a coal gasification unit (1) in said coal gasification system;

wherein said coal gasification unit (1) receives said oxygen gas (160) from said gasification substance producing unit (156) and receives coal (7);

said coal gasification unit (1) burns the coal (7) with the oxygen gas (160) from said gasification substance supplying unit (156), producing said combustible gas and introducing said combustible gas into a cooling unit in said coal gasification system (C9/L51-C10/L51);

said cooling unit cools said combustible gas from said coal gasification unit (1), said cooling unit being in fluid connection with a gas cleanup unit in said coal gasification system (C9/L51-C10/L51); and

said gas cleanup unit removes impurities from said combustible gas (C9/L51-C10/L51).

While Jahnke et al. does not explicitly disclose said coal gasification unit receiving coal from a coal supplying unit, a usage of a coal supplying unit is inherent in the disclosed power generator.

Regarding claim(s) 13, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Jahnke et al. discloses the power generator wherein:

wherein said coal supplying unit employs nitrogen gas (C4/L5-18).

While Jahnke et al. does not explicitly disclose said nitrogen gas employed in said coal supplying unit originating from said gasification substance producing unit, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least part of nitrogen gas form said gasification substance producing unit in said coal supplying unit for the purpose of improving system economic by utilizing as a temperature moderator a gas stream which is available as a by-product of disclosed generator.

Regarding claim(s) 15, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Jahnke et al. discloses the power generator wherein:

said higher temperature steam is supplied to said heat recovery system and to said steam turbine (C11/L58-C12/L10).

With respect to claim 48, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above, additionally, Rice discloses wherein at least one high-temperature section of said gas turbine includes at least one of;

a gas turbine nozzle blade (col. 7, lines 1-7); and

a gas turbine rotor and rotor blade (col. 7, lines 39-41).

4. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jahnke et al. (USP 5,345,756) in view of Rice (USP 4,571,935), as applied to claim(s) 1-6, 10-13 and 15 above, and further in view of Perkins et al. (USP 5,160,096).

Regarding claim(s) 7 and 14, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above, but the reference(s) do/does not disclose gas turbine system comprising an air compressor that supplies air to at least one high-temperature section of the gas turbine system for the purpose of cooling said high-temperature section, producing a higher-temperature air nor said higher-temperature air being recovered after cooling said high-temperature section and supplied to said heat recovery system.

Perkins et al. teaches a gas turbine system comprising at least one air compressor that supplies air to at least one high-temperature section of the gas turbine system for the purpose of cooling said high-temperature section and producing a higher-temperature air (C2/53-61) for the purpose of improving system performance by allowing significant increase in the gas turbine inlet temperature.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least one air compressor that supplies air to at least one high-temperature section of the gas turbine system for the purpose of cooling said high-temperature section and producing a higher-temperature air, as taught by Perkins et al., in the power generator of Jahnke et al., for the purpose of improving system performance by allowing significant increase in the gas turbine inlet temperature.

While Perkins et al. does not explicitly disclose said higher-temperature air being supplied to a heat recovery system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least part of said higher-temperature air in a heat recovery system of Jahnke et al., as Jahnke et al. discloses utilizing hot gas streams available as a by-product of disclosed generator for the purpose of improving system economics (C11/58-63).

5. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jahnke et al. (USP 5,345,756) in view of Rice (USP 4,571,935), as applied to claim(s) 1-6, 10-13 and 15 above, and further in view of Iwata et al. (USP 5,327,718).

Regarding claim(s) 8-9, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above, but the reference(s) do/does not disclose power generator further comprising detector for detecting a calorific value of said combustible gas from said gas cleanup unit nor a controller for controlling the flow rate of said combustible gas and/or high pressure air from an air compressor based on said calorific value. Iwata et al. teaches a gas turbine system comprising a detector for detecting a calorific value of combustible gas and a controller for controlling the flow rate of said

combustible gas and/or air supplied to combustor based on said calorific value (C3/L32-48) for the purpose of improving combustor combustion efficiency and lowering NOx production (C3/L60-64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a detector for detecting a calorific value of combustible gas and a controller for controlling the flow rate of said combustible gas and/or air supplied to combustor based on said calorific value, as taught by Iwata et al., in the power generator of Jahnke et al., for the purpose of improving combustor combustion efficiency and lowering NOx production.

6. Claims 33, 34, 36-39, 42, 44-47, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jahnke et al. (5,345,756) in view of Rice (4,571,935) and further in view of Perkins et al. (5,160,096).

Regarding claims 33, 39 and 46, Jahnke et al. discloses a similar integrated coal gasification combined cycle power generator, the generator comprising:

- a coal gasification system for producing a combustible gas from coal, wherein said gasification system supplies said combustible gas to a gas turbine system (C9/L51-CI 0/L51);

- said gas turbine system comprises a gas turbine for performing expansion work using said combustible gas, wherein said gas turbine supplies exhaust gas to a heat recovery system (C10/L40-51 & C11/L58-63);

- said heat recovery system performs heat exchange, wherein said heat recovery system uses said exhaust gas supplied from said gas turbine as a heat source, and supplies steam generated in the heat exchange to a steam turbine system (Cl 1/L58-C12/L1 0);

- said steam turbine system performs expansion work *(C1OIL4O-51)*, said steam turbine system comprising a condenser to condense said steam from said heat recovery system into water, said water being supplied to a heat exchanger in said coal gasification system, where said water is heated to steam (C12/L22-28).

While Jahnke et al. does disclose that said steam created in a heat exchanger in said coal gasification system is further heated by removing waste heat in another stage of the generator (C9/L1 1-20 and C12/L28-40), the reference does not explicitly disclose said another stage being at least one high-temperature section of the gas turbine system which is at a temperature higher than a temperature of said steam from said heat exchanger.

Rice teaches a combined cycle power generator wherein steam generated by steam turbine system is used to cool at least one high-temperature section of the gas turbine system which is at a temperature higher than a temperature of said steam (Abstract) and after cooling said gas turbine, collected and provided to a steam turbine (col. 11, lines 27-31) for the purpose of increasing system efficiency by providing effective cooling to said gas turbine and at the same time allowing for steam re-heating and recycle to the steam turbine system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use steam condensed by a condenser in steam turbine system and heated to steam in a heat exchanger in coal gasification system, in power generator of Jahnke et al., to cool at least one high-temperature section of the gas turbine system which is at a temperature higher than the temperature of said steam, as taught by Rice, for the purpose of increasing system efficiency by providing effective cooling to said gas turbine and at the same time allowing for steam re-heating and recycle to the steam turbine system.

Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above, but the reference(s) do/does not disclose gas turbine system comprising an air compressor that supplies air to at least one high-temperature section of the gas turbine system for the purpose of cooling said high-temperature section, producing a higher-temperature air nor said higher-temperature air being recovered after cooling said high-temperature section and supplied to said heat recovery system.

Perkins et al. teaches a gas turbine system comprising at least one air compressor that supplies air to at least one high4emperature section of the gas turbine system for the purpose of cooling said high-temperature section and producing a higher-temperature air (C2/53-61) for the purpose of improving system performance by allowing significant increase in the gas turbine inlet temperature.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least one air compressor that supplies air to at least one high-temperature section of the gas turbine system for the purpose of cooling said high-

temperature section and producing a higher-temperature air, as taught by Perkins et al., in the power generator of Jahnke et al., for the purpose of improving system performance by allowing significant increase in the gas turbine inlet temperature.

While Perkins et al. does not explicitly disclose said higher-temperature air being supplied to a heat recovery system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least part of said higher-temperature air in a heat recovery system of Jahnke et al., as Jahnke et al. discloses utilizing hot gas streams available as a by-product of disclosed generator for the purpose of improving system economics (Cl 1/58-63).

Regarding claim(s) 34, Jahnke et al. in view of Rice disclose(s) all of the claim limitations as set forth above. Additionally Rice teaches the power generator wherein:

a higher-temperature steam is produced after cooling said high-temperature section of the gas turbine system with said steam from said heat exchanger, said highertemperature steam is recovered from said at least one high-temperature section of the gas turbine system and supplied to a steam turbine in said steam turbine system (Abstract); and said at least one high-temperature section of the gas turbine is at least one of said gas turbine and a gas turbine combustor (Abstract).

Regarding claim(s) 36, Jahnke et al. in view of Rice disclose(s) all of the claim limitations as set forth above. Additionally Jahnke et al. discloses the power generator further comprising:

a gasification substance producing unit (156) in said coal gasification system for producing an oxygen gas (160) and a nitrogen gas (154) from air (155), said gasification

substance producing unit (156) supplying said oxygen gas (160) to a coal gasification unit (1) in said coal gasification system;

wherein said coal gasification unit (I) receives said oxygen gas (160) from said gasification substance producing unit (156) and receives coal (7);

said coal gasification unit (1) burns the coal (7) with the oxygen gas (160) from said gasification substance supplying unit (156), producing said combustible gas and introducing said combustible gas into a cooling unit in said coal gasification system (C9/L51-C10/L51);

said cooling unit cools said combustible gas from said coal gasification unit (1), said cooling unit being in fluid connection with a gas cleanup unit in said coal gasification system (C9/L51-C10/L51); and

said gas cleanup unit removes impurities from said combustible gas (C9/L51-C10/L5 1). While Jahnke et al. does not explicitly disclose said coal gasification unit receiving coal from a coal supplying unit, a usage of a coal supplying unit is inherent in the disclosed power generator.

Regarding claim(s) 37, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Jahnke et al. discloses the power generator wherein:

wherein said coal supplying unit employs nitrogen gas (C4/L5-1 8).

While Jahnke et al. does not explicitly disclose said nitrogen gas employed in said coal supplying unit originating from said gasification substance producing unit, it would have been obvious to one having ordinary skill in the art at the time the invention

was made to use at least part of nitrogen gas form said gasification substance producing unit in said coal supplying unit for the purpose of improving system economic by utilizing as a temperature moderator a gas stream which is available as a by-product of disclosed generator.

Regarding claim(s) 38, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Jahnke et al. discloses the power generator wherein:

the nitrogen gas produced in said gasification substance producing unit is supplied to said gas turbine combustor, said nitrogen gas combined therein with said combustible gas (Cl 1/L33-41).

Regarding claim(s) 42, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Rice teaches the power generator wherein:

a higher-temperature steam is produced after cooling said at least one high-temperature section of the gas turbine system with said steam from said heat exchanger (Abstract); and

said at least one high-temperature section of the gas turbine is at least one of said gas turbine and a gas turbine combustor (Abstract).

While Rice does not explicitly disclose higher-temperature steam being supplied to a heat recovery system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least part of said higher-temperature steam in said heat recovery system for the purpose of improving system economic by

utilizing a higher-temperature steam which is available as a by-product of disclosed generator for production of steam which can be used in high pressure steam turbine.

Regarding claim(s) 44, .Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Jahnke et al. discloses the power generator further comprising:

a gasification substance producing unit (156) in said coal gasification system for producing an oxygen gas (160) and a nitrogen gas (154) from air (155), said gasification substance producing unit (156) supplying said oxygen gas (160) to a coal gasification unit (1) in said coal gasification system; wherein said coal gasification unit (1) receives said oxygen gas (160) from said gasification substance producing unit (156) and receives coal (7);

said coal gasification unit (1) burns the coal (7) with the oxygen gas (160) from said gasification substance supplying unit (156), producing said combustible gas and introducing said combustible gas into a cooling unit in said coal gasification system (C9/L51-C10/L51);

said cooling unit cools said combustible gas from said coal gasification unit (1), said cooling unit being in fluid connection with a gas cleanup unit in said coal gasification system (C9/L51-C10/L51); and

said gas cleanup unit removes impurities from said combustible gas (C9/L51-C10/L51).

While Jahnke et al. does not explicitly disclose said coal gasification unit receiving coal from a coal supplying unit, a usage of a coal supplying unit is inherent in the disclosed power generator.

Regarding claim(s) 45, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally .Jahnke et al. discloses the power generator wherein:

wherein said coal supplying unit employs nitrogen gas (C4/L5-18).

While Jahnke et al. does not explicitly disclose said nitrogen gas employed in said coal supplying unit originating from said gasification substance producing unit, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least part of nitrogen gas form said gasification substance producing unit in said coal supplying unit for the purpose of improving system economic by utilizing as a temperature moderator a gas stream which is available as a by-product of disclosed generator.

Regarding claim(s) 47, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above. Additionally Jahnke et al. discloses the power generator wherein:

said higher temperature steam is supplied to said heat recovery system and to said steam turbine (C11/L58-C12/L10).

With respect to claim 49, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above, additionally, Rice discloses wherein at least one high-temperature section of said gas turbine includes at least one of;

a gas turbine nozzle blade (col. 7, lines 1-7); and

a gas turbine rotor and rotor blade (col. 7, lines 39-41).

With respect to claim 50, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above, but the reference(s) do/does not disclose gas turbine system comprising an air compressor that supplies air to at least one high-temperature section of the gas turbine system for the purpose of cooling said high-temperature section, producing a highertemperature air nor said higher-temperature air being recovered after cooling said hightemperature section and supplied to said heat recovery system.

Perkins et al. teaches a gas turbine system comprising at least one air compressor that supplies air to at least one high4emperature section of the gas turbine system for the purpose of cooling said high-temperature section and producing a higher-temperature air (C2/53-61) for the purpose of improving system performance by allowing significant increase in the gas turbine inlet temperature.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least one air compressor that supplies air to at least one high-temperature section of the gas turbine system for the purpose of cooling said high-temperature section and producing a higher-temperature air, as taught by Perkins et al., in the power generator of Jahnke et al., for the purpose of improving system performance by allowing significant increase in the gas turbine inlet temperature.

With regard to the limitations directed toward when the high-pressure is provided to the gas turbine, the examiner notes that these are operational conditions which are

not given patentable weight in an apparatus claim as all of the structural limitations have been met and one would be able to operate the recited device in any desired manner.

7. Claim(s) 40 and 41 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Jahnke et al. (USP 5,345,756) in view of Rice (USP 4,571,935) and further in view of Perkins et al. (USP 5,160,096), as applied to claim(s) 33-39 and 42-47 above, and further in view of Iwata et al. (USP 5,327,718).

Regarding claim(s) 40 and 41, Jahnke et al. in view of Rice disclose(s) all of the claim(s) limitations as set forth above, but the reference(s) do/does not disclose power generator further comprising detector for detecting a calorific value of said combustible gas from said gas cleanup unit nor a controller for controlling the flow rate of said combustible gas and/or high pressure air from an air compressor based on said calorific value.

Iwata et al. teaches a gas turbine system comprising a detector for detecting a calorific value of combustible gas and a controller for controlling the flow rate of said combustible gas and/or air supplied to combustor based on said calorific value (C3/L32-48) for the purpose of improving combustor combustion efficiency and lowering NO~ production (C3/L60-64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a detector for detecting a calorific value of combustible gas and a controller for controlling the flow rate of said combustible gas and/or air supplied to combustor based on said calorific value, as taught by Iwata et al., in the power

generator of Jahnke et al., for the purpose of improving combustor combustion efficiency and lowering NO production.

Response to Arguments

8. Applicant's arguments filed February 26, 2003 have been fully considered but they are not persuasive.

35 USC 112

The rejection of claim 3, under 35 USC 112, second paragraph has been withdrawn due to applicant's amendment to the claim.

Art Rejections

Applicant argues that the prior art does not teach or suggest collecting steam that has been generated in a gasification cycle and that has been used to cool a high-temperature portion of a gas turbine, wherein the collected steam is returned to the gasification cycle to be used to cool the gas turbine at a later time.

The examiner respectfully disagrees with applicant. The Jahnke reference has been cited to recognize steam generation in the gasification cycle and the Rice reference has been sighted to provide the teaching of using steam to cool a high-temperature portion of a gas turbine and wherein the collected steam is returned to the gasification cycle to be used to cool the gas turbine at a later time. Thereby, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Rice to the apparatus of Jahnke and use the steam generated in the gasification cycle to cool the high-temperature gas turbine section for the reasons cited by Rice.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 703-305-0074. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

AAD
AAD
May 1, 2003

JERRY D. JOHNSON
PRIMARY EXAMINER
GROUP 1100